

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claim 1 (Currently Amended): An isolated nucleic acid comprising a nucleotide sequence encoding a chimeric protein, ~~said chimeric protein comprises, from N-terminus to C-terminus:~~

~~a) a first peptidyl fragment consisting of an amino acid sequence that has at least 40% identity to residues 1-50 of the B chain of native monellin, in which the percentage identity is determined over an amino acid sequence of identical size to the B chain of native monellin;~~

~~b) a peptidyl bond, or a second peptidyl fragment consisting of 1-12 amino acids; and~~

~~c) third peptidyl fragment consisting of an amino acid sequence that has at least 40% identity to residues 1-45 of the A chain of native monellin, in which the percentage identity is determined over an amino acid sequence of identical size to the A chain of native monellin,~~

~~wherein said chimeric protein is stable and a given amount of said chimeric protein is at least 100-fold sweet as compared to the identical amount of sucrose, and within said nucleic acid, codons which are preferably used by yeast cells are used, which nucleic acid encodes the amino acid residues 1-96 set forth in SEQ ID NO:5.~~

Claim 2 (Canceled): The isolated nucleic acid of claim 1, wherein the first peptidyl fragment consists of an amino acid sequence that has at least 60% identity to the B chain of native monellin.

Claim 3 (Canceled): The isolated nucleic acid of claim 1, wherein the first peptidyl fragment consists of an amino acid sequence that has at least 90% identity to the B chain of native monellin.

Claim 4 (Canceled): The isolated nucleic acid of claim 1, wherein the first peptidyl fragment consists of the amino acid residues 1-50 of the B chain of native monellin depicted as the amino acid residues 1-50 in Figure 1 (SEQ ID NO:5).

Claim 5 (Canceled): The isolated nucleic acid of claim 1, wherein the second peptidyl fragment consists of the amino acid residue Gly.

Claim 6 (Canceled): The isolated nucleic acid of claim 1, wherein the second peptidyl fragment consists of the amino acid sequence Gly-Gly-Gly-Ser (SEQ ID NO:2).

Claim 7 (Canceled): The isolated nucleic acid of claim 1, wherein the second peptidyl fragment consists of the amino acid sequence Gly-Gly-Gly-Ser-Gly-Gly Gly-Ser-Gly-Gly-Gly-Ser (SEQ ID NO:1).

Claim 8 (Canceled): The isolated nucleic acid of claim 1, wherein the third peptidyl fragment consists of an amino acid sequence that has at least 60% identity to the A chain of native monellin.

Claim 9 (Canceled): The isolated nucleic acid of claim 1, wherein the third peptidyl fragment consists of an amino acid sequence that has at least 90% identity to the A chain of native monellin.

Claim 10 (Canceled): The isolated nucleic acid of claim I, wherein the third peptidyl fragment consists of the amino acid residues 1-45 of the A chain of native monellin depicted as the amino acid residues 52-96 in Figure I (SEQ ID NO:5).

Claim 11 (Canceled): The isolated nucleic acid of claim 1 which nucleic acid encodes the amino acid residues 1-96 of Figure 1 (SEQ ID NO:5).

Claim 12 (Canceled): The isolated nucleic acid of claim 1, wherein the chimeric protein is capable of being immunoreactively bound by an anti-monellin antibody.

Claim 13 (Canceled): The isolated nucleic acid of claim 1, wherein the chimeric protein is capable of being immunoreactively bound by an anti-thaumatin antibody.

Claim 14 (Original): The isolated nucleic acid of claim 1, wherein the chimeric protein further comprises an amino acid sequence which is capable of directing secretion of said chimeric protein from *Pichia pastoris*.

Claim 15 (Original): The isolated nucleic acid of claim 14, wherein the secretion directing sequence is an endogenous signal sequence of *Pichia pastoris*.

Claim 16 (Original): The isolated nucleic acid of claim 15, wherein the endogenous signal sequence is selected from the group consisting of the signal sequence of *Pichia pastoris* acid phosphatase, *Pichia pastoris* aspartic proteinase and *Pichia pastoris* carboxypeptidase Y encoded by *Pichia pastoris* PRCl.

Claim 17 (Original): The isolated nucleic acid of claim 14, wherein the secretion-directing sequence is a yeast signal sequence, wherein said yeast is not *Pichia pastoris*.

Claim 18 (Original): The isolated nucleic acid of claim 17, wherein the yeast signal sequence is a signal sequence from *Saccharomyces cerevisiae*.

Claim 19 (Original): The isolated nucleic acid of claim 18, wherein the *Saccharomyces cerevisiae* signal sequence is selected from the group consisting of the signal sequence of *Saccharomyces cerevisiae* SUC 2 and *Saccharomyces cerevisiae* mating pheromone α -factor.

Claim 20 (Original): The isolated nucleic acid of claim 19, wherein the *Saccharomyces cerevisiae* signal sequence is the signal sequence of *Saccharomyces cerevisiae* mating pheromone α -factor.

Claim 21 (Currently Amended): The isolated nucleic acid of claim 14, ~~further comprising wherein the chimeric protein further comprises~~ an amino acid sequence which is capable of directing secretion of said chimeric protein from *Pichia pastoris*.

Claim 22 (Original): The isolated nucleic acid of claim 21, wherein the secretion-directing sequence is the signal sequence of *Saccharomyces cerevisiae* mating pheromone α -factor.

Claim 23 (Original): The isolated nucleic acid of claim 14, wherein the secretion-directing sequence is selected from the group consisting of the signal sequence of *Aspergillus giganteus* alpha-Sarcin, alpha-N-Acetylgalactosaminidase, OmpA protein, the mouse alpha-factor (cCell), the pepper endo-beta-1,4-glucanases, the laccase isolated from the ligninolytic fungus *Trametes*, murine lysosomal acid alpha-mannosidase, the porcine inhibitor of carbonic anhydrase, *Aspergillus awamori* glucoamylase, mouse major urinary protein, pho1, rabbit angiotensin-converting enzyme (ACE), and the bacterial thermostable alpha amylase.

Claim 24 (Currently Amended): The isolated nucleic acid of claim 1, wherein said nucleic acid is a DNA.

Claim 25 (Original): An isolated nucleic acid comprising a nucleotide sequence complementary to the nucleotide sequence of claim 1.

Claim 26 (Original): An isolated nucleic acid hybridizable to the DNA sequence of claim 24.

Claim 27 (Original): The DNA of claim 24, further comprising a promoter which is capable of directing protein expression in *Pichia pastoris*.

Claim 28 (Original): The DNA of claim 27, wherein the promoter is an endogenous promoter of *Pichia pastoris*.

Claim 29 (Original): The DNA of claim 28, wherein the endogenous promoter is the promoter of *Pichia pastoris* glyceraldehyde-3-phosphate dehydrogenase.

Claim 30 (Currently Amended): The DNA of claim 24, ~~said DNA encodes the amino acid residues 1-96 of Figure 1 (SEQ ID NO:5) and~~ said DNA further comprises the promoter of *Pichia pastoris* glyceraldehyde-3-phosphate dehydrogenase and the signal sequence of *Saccharomyces cerevisiae* mating pheromone α -factor.

Claim 31 (Canceled): The DNA of claim 24, wherein the codons which are preferably used by *Pichia pastoris* cells are used.

Claim 32 (Currently Amended): A DNA molecule comprises nucleotide sequence as ~~depicted in Figure 1~~ set forth in SEQ ID NO:6.

Claim 33 (Canceled): The pGWYS1 DNA vector as depicted in Figure 4.

Claim 34 (Original): A recombinant *Pichia pastoris* cell containing the nucleic acid of claim 1.

Claim 35 (Original): A recombinant *Pichia pastoris* cell containing the DNA of claim 32.

Claim 36 (Canceled): A recombinant *Pichia pastoris* cell containing DNA of claim 33.

Claim 37 (Original): A process for producing a chimeric protein comprising growing a recombinant *Pichia pastoris* cell containing the nucleic acid of claim 1 such that the encoded chimeric protein is expressed and secreted by the cell, and recovering the expressed and secreted chimeric protein.

Claim 38 (Original): A process for producing a chimeric protein comprising growing a recombinant *Pichia pastoris* cell containing the DNA of claim 32 such that the encoded chimeric

protein is expressed and secreted by the cell, and recovering the expressed and secreted chimeric protein.

Claim 39 (Canceled): A process for producing a chimeric protein comprising growing a recombinant *Pichia pastoris* cell containing the DNA of claim 33 such that the encoded chimeric protein is expressed and secreted by the cell, and recovering the expressed and secreted chimeric protein.

Claim 40 (Original): The process of claim 37, wherein the expressed and secreted chimeric protein is recovered by a means comprising ion-exchange chromatography.

Claim 41 (Original): The process of claim 40, wherein the ion-exchange chromatography being used is CM-Sephadex column chromatography.

Claim 42 (Original): The process of claim 40, wherein the ion-exchange chromatography being used is DEAE-Sephadex column chromatography.

Claim 43 (Original): The product of the process of claim 37.

Claim 44 (Original): The product of the process of claim 38.

Claim 45 (Canceled): The product of the process of claim 39.

Claim 46 (Original): The product of the process of claim 40.

Claim 47 (Original): The product of the process of claim 41.

Claim 48 (Original): The product of the process of claim 42.

Claim 49 (Currently Amended): A chimeric protein, said chimeric protein comprises, ~~from N terminus to C terminus:~~

~~a) a first peptidyl fragment consisting of an amino acid sequence that has at least 40% identity to residues 1-50 of the B chain of native monellin, in which the percentage identity is determined over an amino acid sequence of identical size to the B chain of native monellin;~~

~~b) a peptidyl bond, or a second peptidyl fragment consisting of 1-12 amino acids; and~~

~~e) a third peptidyl fragment consisting of an amino acid sequence that has at least 40% identity to residues 1-45 of the A chain of native monellin, in which the percentage identity is determined over an amino acid sequence of identical size to the A chain of native monellin;~~

~~wherein said chimeric protein is stable and a given amount of said chimeric protein is at least 100-fold sweet as compared to the identical amount of sucrose, and within said nucleic acid, codons which are preferably used by yeast cells are used~~ the amino acid residues 1-96 set forth in SEQ ID NO:5.